



# MICRO SYSTEMS DEVELOPMENT, INC.

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## INSTRUCTIONS FOR USING THE V16K/V24K RAM EXPANSION CARTRIDGE

These instructions describe the use of the memory expansion cartridge for the VIC 20<sup>®</sup> computer. The cartridge comes ready to plug into the computer through the expansion port on the rear of the VIC 20<sup>®</sup> or an expansion module.

### V16K MEMORY EXPANSION CARTRIDGE

The V16K Memory Expansion cartridge provides 16,384 bytes of additional user memory to the VIC 20<sup>®</sup> computer. The cartridge can be used by itself or in conjunction with other memory expansion cartridges to add up to a total of 28K of expansion memory.

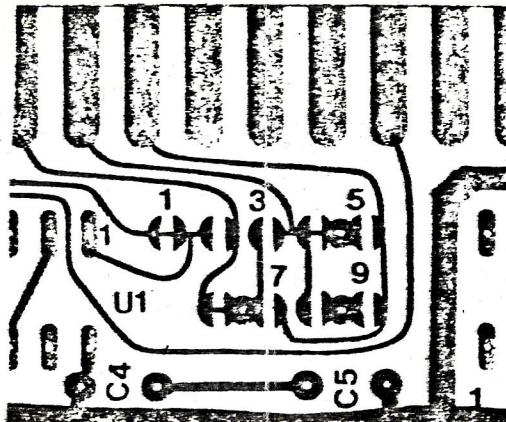
The V16K cartridge comes configured for the first available 16K block of memory (address \$2000 - \$5FFF). This starting address can be changed if used in conjunction with 8K of expansion memory. In order to change the starting address of the memory expansion cartridge:

- 1) Remove the screws from the bottom of the memory cartridge.
- 2) Remove the printed circuit board and locate jumpers 1 - 9 on the component side of the board. (see fig. 1)
- 3) Remove all jumpers and install jumpers 2 and 3 to allow user memory between addresses \$4000 and \$7FFF.

*16384 32767*  
Note: The board comes with jumpers 1 and 6 etched into the board. These jumpers need to be cut before changing the starting address range.

- 4) Reinstall the printed circuit board into the cartridge and reassemble the cartridge.

Figure 1.



## V24K MEMORY EXPANSION CARTRIDGE

The V24K Memory Expansion cartridge provides 24,576 bytes of additional user memory to the VIC 20<sup>®</sup> computer. The cartridge can be used by itself or in conjunction with a 3K expansion module to provide the maximum of 31K user memory. However the 3K located from \$0400 through \$0FFF can only be accessed by machine language programs. 4095

### OPERATING INSTRUCTIONS:

- 1) Turn off the system power.
- 2) Insert the memory cartridge into the expansion connector with the label up.
- 3) Turn on the system power.
- 4) The sign on message should indicate that additional memory is available with one of the following messages depending on the amount of user memory added:

For 16K expansion: '19967 BYTES FREE'

For 24K expansion: '28159 BYTES FREE'

IC's  
M58725P = 55- MK 4802.  
74LS139 P